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	CIVIL/STRUCTURAL/ ARCHITECTURAL/ GEOTECHNICAL	ELECTRICAL	MECHANICAL	PROCESS/NUCLEAR	CADD	PROJECT REP.	ENVIRONMENTAL & <i>RMAP REVIEW</i>	WASTE MANAGEMENT	SAFETY	INDUSTRIAL HYGIENE	FIRE PROTECTION	QA	RADCON	FIELD ENGINEER	OTHER
CHECK REVIEW REQUIREMENT	✓						✓		✓			✓	✓		✓
REVIEWED BY	<i>TEW</i>						<i>BW</i>		<i>MA</i>			<i>mw</i>	<i>SP</i>		<i>md</i>

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Project Engineer/STR

4/10/12

Date

DOCUMENT ID NUMBER

0600X-SC-G0506 (S60X506A00)

05-050

001Q

SC/P.O. No.

SSRS ITEM

SUBMITTAL

ERDF DISPOSAL AND OPERATIONS <i>Subcontract #S60X506A00</i> LANDFILL CELL OPERATIONS PROCEDURE S.M. STOLLER CORPORATION	Revision No: 12 Submittal No. : 5-50 Document Type: Technical Reference Page 5 of 87
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ERDF DISPOSAL AND OPERATIONS

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- 5.6.1.2 Place the waste packages in the designated, authorized ICA. Containers may not be stacked more than two high. **(RMAP 644)**
- 5.6.1.3 Complete the Disposal Coordinate section on the original OWTF.
- 5.6.1.4 After the waste has been processed (i.e., grouted, macro-encapsulated, covered, etc.), document in accordance with the requirements of the *Landfill Packaged Waste Inventory Tracking Procedure*, submittal 5-65.
- Either a portion or all of the containers in an ICA may be processed (i.e., grouted, encapsulated, covered, etc.) at one time.
- 5.6.2 Asbestos Containing Materials (ACM) **(RMAP 469)**
- 5.6.2.1 Place ACM into the cell by either dumping off a dump ramp (Section 5.3) or by using the Place and Cover disposal technique (Subsection 5.6.14), as directed by Site Superintendent. **(RMAP 356)**
- 5.6.2.2 If waste will be disposed off a dump ramp ensure that the waste push is within the reach of water application and use copious amounts of water during the dumping process to control dust.
- 5.6.2.3 If the waste is bagged, the dozer operator shall push the bags in a manner that will minimize the chance of breaching the bag. Straight pushes into a depression is the optimum placement method.
- 5.6.2.4 Cover waste with non-asbestos waste or clean dirt (6 inches minimum). **(RMAP 358)**
- 5.6.2.5 Avoid future actions which would exhume the placed ACM.
- NOTE: Lifts that exceed the maximum permissible lift thickness may be required to control the hazard presented by the waste (e.g., placement of waste where the waste is bermed to reduce dose, placement of large discreet items, etc.).**
- 5.6.3 Large Steel Debris
- 5.6.3.1 If the waste item is too large to integrate into the standard lift, place the items as described in Section 5.6.6.
- 5.6.3.2 If the waste item can be integrated into the standard lift, mix predominately large steel debris with soil to minimize void space such that the proportion of the mix is not less than two parts soil to one part (2:1) metal debris. **(RMAP 593)**
- 5.6.3.3 Build the lift in accordance with Section 5.8 of this procedure.

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5.12.5 Repeat compaction and compaction testing until satisfactory results are obtained.

5.12.6 Inform the Site Superintendent when the results pass.

5.13 Construction/Compaction Verification Documentation

5.13.1 The CAES Administrator generates a "Compaction Verification Report" for each block at each target elevation and following construction of 15 inch lifts in accordance with *Computer Aided Earthmoving System (CAES) Application*, submittal 5-66.

5.13.2 The operator completes a *Cell Operations Data Sheet 1 – Lift Construction & Compaction Documentation*, form ERDF_5-50.1, to document construction and compaction activities under the following circumstances:

- When the CAES is not operational
- When compacting with a compaction dozer
- As directed by the Site Superintendent or the CAES Administrator

5.14 Dust Control Requirements (RMAP 418)

NOTE: Dust control is required during project activities that may result in fugitive dust emissions. The activities described in this section implement the requirements of the *Dust and Contamination Control Plan*, submittal 5-27.

NOTE: If precipitation events have added sufficient moisture to control dust on roadways or if freezing conditions exist, water will not be applied to roadways.

NOTE: Leaking water hoses are isolated and repaired (not in the scope of this procedure) as soon as practical to minimize generation of leachate.

5.14.1 Monitor for leaking water hoses. If a leak is observed, notify the Shift Superintendent.

5.14.2 Monitor road and ramp conditions throughout the day. Apply water to haul roads and other traffic areas adjacent to the active dump face, as necessary to control dust.

- Increase the frequency of application during periods of high wind and dry/hot weather conditions.
- Avoid spraying near ground personnel.

5.14.3 If a water truck is used as the source of water, position the truck a safe distance from the edge to ensure dump face stability. Use a spotter, as necessary, to position the truck.

5.14.4 Spray water on the waste as it is being dumped, as necessary to control dust, using a water truck or hose connected to a water line. **(RMAP 429)**

- 5.14.4.1 During windy periods apply water from the upwind side of the waste dumping area, to the extent practical.

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WARNING: HOSES ATTACHED TO THE NON-POTABLE WATER SYSTEM CAN BE SUBJECT TO SYSTEM PRESSURES OF UP TO 200 PSI.

- 5.14.4.2 If fire hoses are used, firmly grip the hose and apply water pressure slowly at start-up to prevent loss of control or whipping of the hose. Do not place hands or other body parts in front of discharging nozzles or disconnect nozzles while under pressure.

WARNING: EXCESS DUST SUPPRESSION WATER MAY CAUSE SPREAD OF RADIOLOGICAL CONTAMINATION IF ALLOWED TO RUN OUT OF THE CONTAMINATION CONTROL AREA INTO A CLEAN AREA.

- 5.14.4.3 Limit the amount of water to the amount necessary to control dust and to facilitate compaction. Do not use excessive water and do not allow water to run out of the contamination area.

- 5.14.5 De-pressurize hoses after daily use (close of business).

5.15 End-of-Day Cover (RMAP 111); (RMAP 705)

NOTE: Activities in this section are completed at the end of operations each day that waste is placed.

- 5.15.1 Spray waste that was placed during the day and any other disturbed area of waste, such as stockpiles that have been worked, with an approved soil fixative, as described in Section 5.16, Soil Fixative Application. Alternatively, these areas may be covered with a thin layer of DOC. **(RMAP 418)**
- 5.15.2 If DOC is used for the End-of-Day cover and it was placed on a compacted surface, then the DOC can be incorporated into the first layer of waste that is placed the next operating day.
- 5.15.3 If DOC is used for the End-of-Day cover and it was placed on an un-compacted lift that was at the maximum lift thickness, it shall be removed prior to compacting the placed waste. If the lift was not at maximum thickness, it may be left in place and incorporated into the lift.
- 5.15.4 If a soil fixative or DOC cannot be applied at the end of the working day, Stoller Management shall notify the WCH Subcontract Technical Representative (STR).

5.16 Soil Fixative Application (RMAP 111)

NOTE: A soil fixative is applied to the exposed working surface of the waste placement and compaction areas and on new or disturbed stockpiled waste at the end of each working day. Soil fixative may also be applied when high winds are forecasted or during operational delays, as directed by the Site Superintendent. When high winds are forecast, fixatives should be applied prior to establishment of radiological postings that would preclude access to areas required by application equipment, if possible.

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NOTE: The steps in this section may be performed in a different order than presented, unless otherwise noted.

5.16.1 General Requirements

- 5.16.1.1 Operation of the soil fixative applicator is performed in accordance with manufacturer's instructions.
- 5.16.1.2 Personnel who operate the soil fixative application equipment (i.e., Posi-shell® applicator) are required to have documented training on the system.
- 5.16.1.3 The following precautions shall be taken when working on or using the Posi-shell® soil fixative applicator:
 - Access to the working deck of the applicator and the top hatch of the silo (hopper) is only permitted from the access ladders. Workers shall maintain 3-point contact with the ladder during climbing.
 - The gate shall be closed across the access opening when personnel are on the working deck of the applicator.
 - Personnel shall exercise extreme caution when working on the deck as this surface can become extremely slippery when wet.
 - During application, workers can inspect the internals of the applicator tank, as necessary; however, workers shall minimize the time spent in areas on the applicator other than in the operator's position.
 - Inspections shall not be conducted while the hopper is being filled or the hopper is transferring material to the applicator.
 - Access doors to the applicator tank shall be latched open at all times when cleaning the tank.
 - Nozzles shall not be disconnected when the pump is running.
 - Workers shall not put hands (or other body parts) in front of the discharge nozzles while spraying.
 - Operators should avoid spraying at or near other persons.
 - Minimize spraying into the wind, when possible.
- 5.16.1.4 If problems are encountered with the applicator, testing and troubleshooting will be done only with concurrence of the FWS.
- 5.16.1.5 The large Posi-shell® applicator is towed with a water truck, dump truck, or other suitable equipment.
- 5.16.1.6 The small applicator is transported on a dozer or other equipment designed to hook onto the Posi-shell® applicator.

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5.16.2 Silo (Hopper) Filling Requirements

- 5.16.2.1 The silo is filled with Portland cement by a vendor that specializes in providing this service. The silo is filled in accordance with manufacturer's instructions.

WARNING: THE HOPPER BAG HOUSE IS PRESSURIZED DURING FILLING OPERATIONS. OPENING THE BAG HOUSE ACCESS COVER OR TOP HATCH INSPECTION COVER DURING FILLING CAN PROPEL THESE COVERS.

- 5.16.2.2 The cement delivery driver will be escorted. The escort shall ensure that the following precautions are taken:
- Do not open the bag house access cover or the top hatch inspection cover during filling operations.
 - Wear gloves when handling cement.
 - Avoid dust as much as possible.
- 5.16.2.3 The bag house will be cleaned in accordance with manufacturer's recommendations when the silo is filled.
- Wear gloves when in contact with cement.

5.16.3 Pre-application Preparation

WARNING: THE APPLICATOR IS NOT EQUIPPED WITH BRAKES. PERSONNEL INJURY AND/OR PROPERTY DAMAGE MAY OCCUR IF THE APPLICATOR ROLLS OUT OF CONTROL.

- 5.16.3.1 If not already hitched, hitch the applicator to the towing unit.

CAUTION: DAMAGE TO THE EQUIPMENT MAY OCCUR IF ANY OBJECTS ARE DROPPED INTO THE MIXING TANK WHILE RUNNING.

WARNING: EXPOSURE TO THE FIXATIVE MAY CAUSE SKIN AND LUNG IRRITATION.

- 5.16.3.2 Personnel who will be on the applicator and/or handling the fixative shall don/doff PPE and other equipment in accordance with the following requirements:
- Protective gloves (e.g., latex, leather, or other suitable type) are required to be worn when handling the fixative components and product (other than water).
 - A dust mask may be worn for personal comfort, if desired; however, use of a dust mask is not required. Use of a dust mask is recommended by the manufacturer.
 - Hard-hats should not be worn when on the applicator. Safety vests may be removed if they contain unsecured items.
 - Anything that may be inadvertently dropped into the tank shall be removed or secured (i.e., badges, radios, pens, etc.).

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5.16.3.3 Perform pre-start checks in accordance with manufacturer's instructions.

5.16.3.4 Use a forklift to elevate bentonite bags to an elevation where they can be off-loaded onto the deck.

WARNING: WALKING SURFACES ON THE APPLICATOR ARE SLIPPERY, PARTICULARLY WHEN WET AND DURING FREEZING CONDITIONS.

5.16.3.5 Add fixative components to the applicator tanks and mix, in accordance with manufacturer's instructions.

- Use proper lifting techniques and take precautions not to overextend when manually manipulating the bags of bentonite. Obtain assistance, when necessary.
- The grates covering the mixing tank are required to be in place when filling the tank.
- Bentonite and water mixture may be prepared ahead of time. Cement is added just prior to application.
- Do not open the bag house during filling operations.
- Avoid dust as much as possible.

5.16.3.6 Prior to towing the applicator, the towing unit operator shall verify the following:

- The applicator is properly attached and the safety cables have been installed.
- The drawbar jack is fully retracted and the wheel chocks have been removed.

5.16.3.7 Prior to beginning application, both the tow unit operator and the applicator operator should verify that they have working radio communication. If radios are not available, an alternate communication protocol will be agreed to.

5.16.3.8 If the in-cell applicator will be used, transfer the prepared fixative mixture from the large applicator to the smaller, in-cell applicator.

5.16.4 Application of Fixative

NOTE: The spraying equipment may be operated from clean areas of the landfill or within the active waste placement areas. The large applicator is operated outside the cell. The small applicator is generally operated inside the cell.

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WARNING: GROUND PERSONNEL PRESENT IN THE VICINITY OF IN-CELL APPLICATOR COULD BE STRUCK BY HEAVY EQUIPMENT OR FLYING DEBRIS.

- 5.16.4.1 The FWS shall ensure that all in-cell activities in the vicinity of ground personnel are suspended during application of fixative. Approved in-cell activities that are allowed to continue must be located far enough away so as to not present a hazard of ground personnel being struck by flying waste materials. Ground personnel and operator shall maintain constant awareness of each other's position.
- 5.16.4.2 The tow operator will tow the applicator to locations to permit application of the fixative.
 - The large applicator may be towed with the operator on top of the applicator but, but only for short distances.
 - The applicator operator is NOT permitted to ride on the in-cell applicator while it is being moved.
- 5.16.4.3 The applicator operator will spray fixative onto the dump face, waste placement and compaction areas, staging piles, and other areas within the landfill as conditions warrant and as directed by the Site Superintendent. **(RMAP 536)**

5.16.5 Close-Out Activities

- 5.16.5.1 Inspect hazard postings, (e.g., work area postings, radiological postings, etc.) to ensure that overspray has not made the signs and postings unreadable. Clean posting(s), as necessary.
- 5.16.5.2 Wash out applicator(s).
 - Use care not to overextend into mixing tank.
 - Close the grate prior to running auger.
- 5.16.5.3 Unhitch the applicator, if necessary.
 - Position the applicator on level ground prior to unhitching.
 - Chock wheels prior to unhitching.

5.16.6 Periodic Maintenance

NOTE: The interior of the applicator is periodically cleaned, as necessary. Cleaning requires personnel entry into the applicator tank.

WARNING: THE INTERIOR OF THE APPLICATOR HAS BEEN DETERMINED TO BE A NON-PERMIT REQUIRED CONFINED SPACE. TANK IS REQUIRED TO BE DRAINED. PERSONNEL MAY BE ENGULFED BY MATERIAL IF THE TANK IS NOT PROPERLY DRAINED.

- 5.16.6.1 H&S approval is required prior to entry into the tank. H&S may perform monitoring and/or verify energy controls, as necessary.

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5.16.6.2 Ensure that a second person is present and will remain present for the entire cleaning process. The second person may not enter the tank.

5.16.6.3 Ensure that the tank is drained of all excess material.

WARNING: SERIOUS INJURY WILL OCCUR IF THE AUGER IS ACTIVATED WHILE PERSONNEL ARE IN THE TANK.

5.16.6.4 Ensure the engine is off, or turn off, as necessary.

5.16.6.5 The employee entering the applicator takes possession of the sole key to the applicator.

5.16.6.6 Sign, date and indicate "Posi-shell Cleaning" on a "Stop - Do Not Operate" tag and hang the tag on the control panel enclosure.

5.16.6.7 Latch tank cover open.

5.16.6.8 Open grate cover and latch.

5.16.6.9 Clean in accordance with manufacturer's instructions.

5.16.6.10 Close the grate and tank cover.

5.16.6.11 Remove the tag and replace the key.

5.17 Winterization Period Supplemental Instructions

NOTE: The requirements in this section are applicable during the designated Winterization Period (October 31 through March 31) unless otherwise directed by the Site Superintendent.

WARNING: EXCESS WATER MAY CAUSE SPREAD OF RADIOLOGICAL CONTAMINATION IF ALLOWED TO RUN OUT OF THE CONTAMINATION CONTROL AREA INTO A CLEAN AREA.

5.17.1 Drain dust suppression equipment at the completion of daily operations, as follows:

5.17.1.1 Turn off the main water supply.

5.17.1.2 Open lower drain valve to drain above-ground piping. Do not allow the drained liquid to run out of a contamination control area into a clean area.

WARNING: PERSONNEL MAY BE INJURED BY WHIPPING LINES OR BEING EXPOSED TO HIGH PRESSURE AIR FROM THE COMPRESSOR

5.17.2 Use a compressor to blow out the water lines. Take the following precautions when using heavy duty compressors:

5.17.2.1 Inspect compressor prior to use. Verify whip checks are in place.

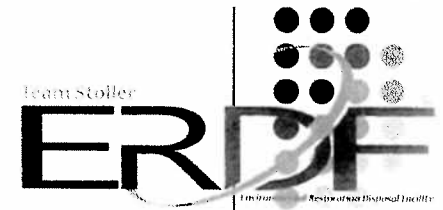
5.17.2.2 Avoid straddling the air lines.

5.17.2.3 Do not subject any body parts to the air stream from the compressor.

Landfill Cell Operations Procedure

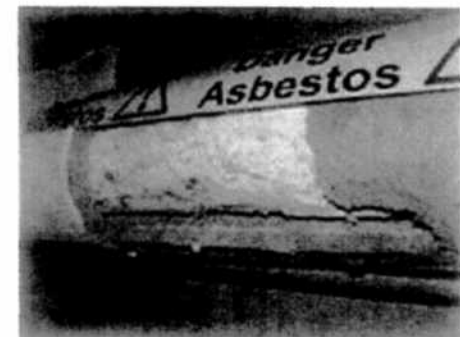
5-50 FCN #3

8/16/12



Asbestos Containing Material (ACM) Disposal

- ***New Dump Ramp Asbestos Posting***
- ***Remove Posting from Dump Ramp After ACM Disposal Is Complete***



5-50 FCN #3 8/16/12

Team Stoller

ERDF
Environmental Remedial Disposal Facility

CAUTION

**ASBESTOS WASTE
DISPOSAL SITE**

**DO NOT CREATE DUST
BREATHING ASBESTOS DUST IS
HAZARDOUS TO YOUR HEALTH**



Not a goal or a target,
but a commitment to the way we work.

5-50 FCN #3

8/16/12



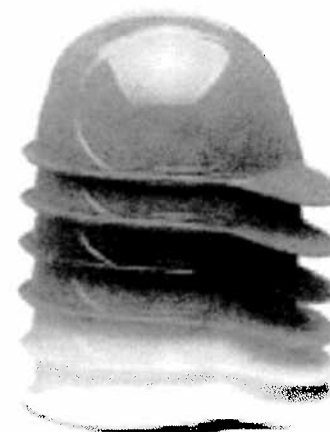
Wash Out Process Only

Applies to workers in **Aerial Lift**

- ***Hard-hats may not be required as determined by the Health and Safety Representative***



Not a goal or a target,
but a commitment to the way we work.



CAUTION

**ASBESTOS WASTE
DISPOSAL SITE**

DO NOT CREATE DUST

**BREATHING ASBESTOS DUST IS
HAZARDOUS TO YOUR HEALTH**